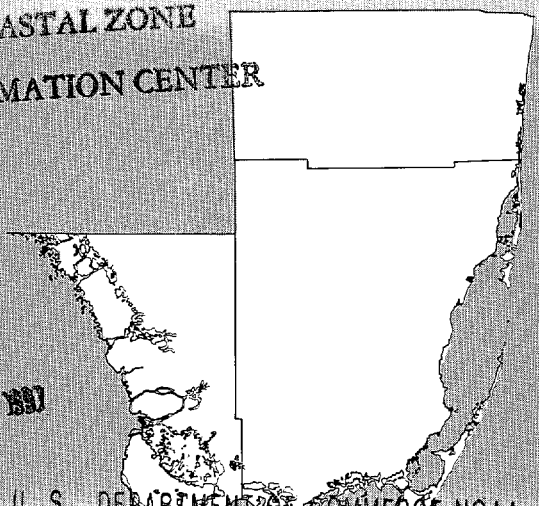
SOUTH FLORIDA
OIL SPILL RESPONSE HANDBOOK

July 1984



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To prepare for the growing threat to South Florida's coastal environmental, recreational, and economic resources from a major oil spill, the South Florida Regional Planning Council has developed an Oil Spill Shoreline Priority Protection Response Strategy to supplement the resources of federal and state agencies responsible for oil spill response. Three documents comprise this Strategy:

- Environmental Sensitivity Atlas

  The Atlas profiles, on 23 color plates, geomorphic, biological, and socioeconomic characteristics of the South Florida coast. Based on the effects of oil and the relative cost of cleanup, shoreline protection priorities are established. The color-coding of shoreline types, from least to most sensitive to spilled oil, provides ease of reference for contingency planning and field efforts in the event of a spill.

- Technical Report

  The Technical Report, designed to supplement the information in the Atlas, provides detailed information on shoreline types, affected flora and fauna, and protection and cleanup measures.

- Oil Spill Response Handbook

  The Handbook assists local governments in responding effectively, within established legal constraints, to an oil spill along South Florida's coast. While designed to be used in conjunction with the Atlas and Report, the Handbook's size and water resistant paper allow it to be carried to an oil spill site for reference throughout the containment and cleanup effort.

This project was funded in part through a Coastal Energy Impact Program Grant through the Florida Department of Veteran and Community Affairs, Division of Local Resource Management, Office of Federal Coastal Programs, with funds from the United States Department of Commerce, under the Coastal Zone Management Act of 1972 (PL-92-583) as amended.

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ABBREVIATIONS

The following abbreviations are used throughout this Handbook:

CFR	Code of Federal Regulations
COPM	Captain of the Port of Miami
CWA	Clean Water Act
FAC	Florida Administrative Code
FDER	Florida Department of Environmental Regulation
FDNR	Florida Department of Natural Resources
FS	Florida Statutes
FWPCA	Federal Water Pollution Control Act
NCP	National Contingency Plan
NRC	National Response Center
NRT	National Response Team
OSC	On-Scene Coordinator
RRT	Regional Response Team
SAC	State Agency Coordinator
SRT	State Response Team
SSC	State Spill Coordinator
USC	United States Code
USCG	United States Coast Guard

LOCAL GOVERNMENT EMERGENCY PROCEDURES

LOCAL GOVERNMENT PREPARATION FOR AN OIL SPILL

1. One department should be the lead agency for coordinating local response and one person designated as the local coordinator. Staff members in the appropriate department should be designated as members in the local oil spill response team. Departments that should be represented include:

   Public Utilities
   Parks and Recreation
   Planning
   Police
   Fire
   Environmental Regulation
   Emergency Preparedness
   Transportation
   County or City Manager's Office

2. Oil Spill Coordinators should be familiar with:
   - Federal (national, regional, and local) and State (FDNR) contingency plans,
   - the Oil Spill Atlas and Report prepared by the South Florida Regional Planning Council (SFRPC) that identify shoreline priorities for oil spill protection, containment, and cleanup methods; and
   - reporting and record-keeping requirements for reimbursement of expenses.

3. The local coordinator should establish contact with the U.S. Coast Guard Marine Safety Office (MSO) (page 10) and the State Bureau of Emergency Management (page 11) and develop agreements to ensure coordination of efforts in notification, containment, cleanup, restoration, and cost recovery.

4. Local governments should examine the USCG SKIM system (pages 57-58) to
   - ensure that all local cleanup resources are listed;
   - consider stockpiling containment and cleanup equipment in locations where there are inadequate resources; and
   - work with the USCG to obtain and stockpile additional resources.

5. Forms for oil spill reports and records for reimbursement, based on the Federal and State requirements, should be prepared and made available to oil spill coordinators prior to an emergency.

PROCEDURES TO FOLLOW WHEN A SPILL OCCURS

1. Note spill characteristics (pages 7-8).

2. Notify priority contacts (pages 10-12) and provide them with spill characteristics information.

3. If, within 1 hour of notification, representatives of the USCG or FDNR have not appeared at the site of the spill, notify the secondary contacts (pages 13-14).

4. State law maintains the right of any person to render assistance in containing or removing a pollutant. However, TO QUALIFY FOR REIMBURSEMENT OF EXPENSES and to coordinate with State and Federal authorities:

   GET APPROVAL FROM STATE AND FEDERAL AUTHORITIES BEFORE ATTEMPTING ANY CLEANUP ACTION.

5. Keep itemized records of all expenses and report to FDNR and USCG (see reimbursement procedures, pages 15-18).

6. Be sure all actions taken are with approval from or at the request of the OCS and SAC and are in keeping with State and Federal legal responsibilities and policies (see pages 53-64).

7. Be sure that the person in charge of any local oil spill response action is fully acquainted with:

   - the Federal (national, regional, and local) and State (FDNR) contingency plans,
   - oil spill response techniques,
   - procedure for coordination with the OCS and SAC prior to the spill, and
   - the reporting and record keeping requirements for reimbursement of expenses.

OIL TYPES AND

Oil Type	Examples	Physical/Chemical Properties
(1) Light, volatile oils	Distillate fuels such as gasoline, diesel, No. 2 fuel oil	- Spread rapidly - High evaporation and solubility rates - Tend to form unstable emulsions - Very toxic to biota when fresh - May penetrate substrate - Can be removed from surfaces by simple agitation and low pressure flushing
(2) Moderate to heavy oils	Medium to heavy paraffin-based refined oils and crude oils	- Moderate to high viscosity - Toxicity variable depending on light fraction composition - In tropical climates, rapid evaporation and solution form less toxic weathered residue with toxicity due more to smothering - Light fractions may contaminate interstitial water - Tend to form stable emulsions under high physical energy conditions - Variable penetration, a function of substrate grain size - High potential for sinking after weathering and uptake of sediment - Generally removable from water surface when fresh - Weather to tar balls and tarry residue
(3)	Asphalt, Bunker C, No. 6 fuel oil, waste fuel	- Form tarry lumps at ambient temperatures - Non-spreading - Relatively non-toxic due to substrate - May soften and flow when exposed to the sun - Cannot be recovered from water surface with most cleanup equipment - Easily removed manually from beaches

Toxicological Properties

- Acute toxicity is related to the content and concentration of the aromatic fractions
- Aromatic fractions are very toxic due to the presence primarily of napthalene compounds and, to a lesser extent, benzene compounds
- Heavy molecular weight compounds are immediately less toxic, but may be chronically toxic since many are either known or potential carcinogens
- Acute toxicity of individual aromatic fractions will vary among species due to differences in the rate of uptake and rate of release of these compounds
- Mangroves and marsh plants may be chronically affected due to penetration and persistence of aromatic compounds in sediments

- Acute and chronic toxicity in marine organisms is likely to result from:
  1) Mechanical or physical coverage - oil completely smothering organisms causing death
  2) Chemical toxicity - results from the exposure of very toxic aromatic fractions of the oil to marine organisms
  3) A combination of mechanical or physical coverage and chemical toxicity.
- Mechanical or physical smothering causes acute toxicity in many marine organisms and chronic toxicity in many marine plants (especially mangroves)

- Acute and chronic toxicity occurs more from smothering effects than from chemical toxicity, due to the small proportion of toxic aromatic fractions found in heavy, residual oils
- Toxicity is more common in marine plants (especially mangroves) and sedentary organisms than in mobile organisms
- Acute and chronic toxicity also results from thermal stress, due to the elevation of temperature in oiled habitats

REPORTING AN OIL SPILL

This information should be provided as completely as possible, to assure that responsible agencies can take immediate, effective action. DO NOT DELAY, however, in notifying priority contacts even if you are unable to provide all information.

Date and Time _____

Type of Oil (see page 5 for descriptions):

- Light, volatile oils ☐
- Moderate to heavy oils ☐
- Asphalt, Bunker C, No. 6 fuel oil, waste fuel ☐
- Other (not oil, specify) _____

Location _____
Longitude and latitude if possible; also landmarks.

Source of Spill (if known) _____

If a vessel is the source

- Name _____
- Approximate Size _____
- Port of Registry _____

Spill due to (if known):

- Collision ☐
- Grounding ☐
- Other (i.e., leak, spilled container)

_____

Injuries _____

REPORTING AN OIL SPILL (Cont'd.)

Volume of Spill (Check One)

Standard Term	Gallons Oil/ Square Mile	Appearance	
barely visible	.25	barely visible under favorable light	☐
silvery	50	silvery sheen on surface water	☐
slightly colored	100	trace of color	☐
brightly colored	200	bright color bands visible	☐
dull	666	colors turn dull brown	☐
dark	1,332	much darker brown	☐

Note: A one-inch thickness of oil equals 5.61 gallons per square yard or 17,378,709 gallons per square mile.

Water depth _____

Tide _____

Weather Conditions _____

Wind Speed and Direction _____

Current Speed and Direction _____

Wave Height and Direction _____

Action Taken to Clean Up Oil Spill _____

_____

_____

FEDERAL AND STATE OIL SPILL RESPONSE JURISDICTION

State Coastal Jurisdiction (including all of Monroe County and the Dry Tortugas):

- Florida Department of Natural Resources

State Inland Jurisdiction:

- Florida Department of Environmental Regulation

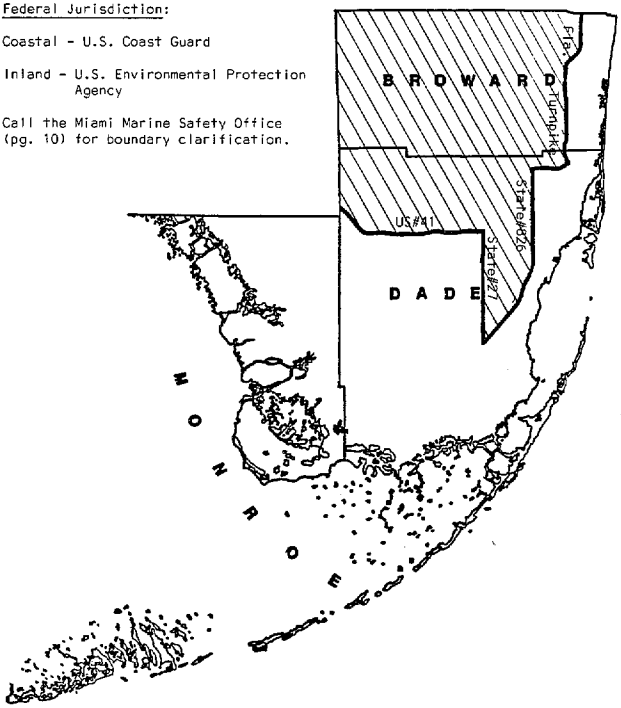
From the north Broward County border south along the Florida Turnpike to State#826. West then south on State #826 to State#27, then north on State #27 to US#41, then west on US#41 to the Dade County border.

Federal Jurisdiction:

Coastal - U.S. Coast Guard

Inland - U.S. Environmental Protection Agency

Call the Miami Marine Safety Office (pg. 10) for boundary clarification.



PRIORITY CONTACTS TO NOTIFY CONCERNING SPILL

Upon completion of the form on pages 7 and 8, immediately notify all federal and state contacts specified below, if this is a coastal spill (see map on page 9). If the spill is inland, notify priority contacts on page 12. In both instances, also notify the appropriate county and municipal contacts. Note time of contact and keep this list as a record of notification. (A column has been provided to allow you to update this contact list, should changes occur).

Current Contact	Date/Time of Contact	New Contact/ Date of Change

FEDERAL

U.S. Coast Guard (USCG)

National Response Center
Day or Night: 800-424-8802

Marine Safety Office
(MSO) Miami
Day or Night: 305-350-5691
(This office notifies the OSC)

7th Coast Guard District
Oil Spill Reporting Office
Day: 305-350-5276
Night: 305-350-5611

STATE OF FLORIDA

Dept. of Natural Resources (FDNR)

State Agency Coordinator
Carolann DeFord Bowen
Day: 904-488-1992
Night: 904-488-5757
1-800-342-1829

Florida Marine Patrol
Broward & Dade counties
Day or Night: 305-325-3346
1-800-342-1829

Florida Marine Patrol
Monroe County
Day or 305-743-6542
Night: 904-488-5757
1-800-342-1829

PRIORITY CONTACTS (Cont'd.)

Current Contact	Date/Time of Contact	New Contact/ Date of Change

Dept. of Environmental Regulation (FDER)

State Spill Coordinator
Greg Lee
Day: 904-488-0190
Night: 904-224-3772
904-997-8435

Alternate: Jeff Taylor
Day: 904-488-0190
Night: 904-224-4310

Dept. of Veteran and Community Affairs (FDVCA)

Bureau of Emergency Management
Bill Lee
Day or Night: 904-488-1320

Alternate: George Guthrie
Day or Night: 904-488-1320

LOCAL - Counties

Broward County

Env. Control Enforcement
Bill Metzger
Day or Night: 305-765-5881

Emergency Preparedness
Arthur St. Amand
Day: 305-765-5026
Night: 305-523-2192

Dade County

Dept. of Environmental
Resource Management
Pollution Control
Day or Night: 305-638-6088

Emergency Preparedness
Martin Bishop
Day: 305-596-8700
Night: 305-661-2919

PRIORITY CONTACTS (Cont'd.)

Current Contact	Date/Time of Contact	New Contact/ Date of Change

Monroe County

Civil Defense
Bill Wagner
Day: 305-294-9581
305-294-4641 (Ext. 566)
305-296-2424
Night: 305-289-1789
305-296-2424

IF THE SPILL LOCATION IS INLAND, IMMEDIATELY CONTACT THE FOLLOWING AGENCIES:

U.S. Environmental Protection Agency (EPA)

Primary: Mr. Al Smith, Chief
Emergency and Remedial
Response Branch
Day: 404-881-3931
Night: 404-881-4062

Alternate: Mr. George Moein, Chief
Emergency Response & Control Div.
Day: 404-881-3931
Night: 404-881-4062

Florida Dept. of Environmental Regulation (FDER)

State Spill Coordinator:
Greg Lee
Day: 904-488-0190
Night: 904-997-8435

Alternate: Jeff Taylor
Day: 904-488-0190
Night: 904-224-3772
904-576-4801

SECONDARY CONTACTS TO NOTIFY CONCERNING SPILL

If no state or federal personnel have appeared on site within 1 hour of notification, and the spill is still visible, then call:

Current Contact	Date/Time of Contact	New Contact/ Date of Change

FEDERAL

On Scene Coordinator (OSC)
Capt. of the Port of Miami (COPM)
Commander R. N. Roussel
Day or Night: 305-350-5691

Regional Response Team
Chairman
Coast Guard 7th District
Captain Tanos
Day: 305-350-5651
Night: 305-350-5611

STATE OF FLORIDA

State Response Team (SRT) Chairman
Secretary Elton Gissendanner
Day or Night: 904-488-5757
1-800-342-1829

LOCAL - COUNTIES

Broward County
Administrator
F. T. Johnson
Day: 305-765-5140
Night: 305-467-1150

Dade County
Manager
Merritt Stierheim
Day: 305-579-5311
Night: 305-274-9683

SECONDARY CONTACTS (Cont'd.)

Current Contact	Date/Time of Contact	New Contact/ Date of Change
Monroe County Administrator Kermit Lewin Day: 305-294-4641 Night: 305-296-6455		

MUNICIPAL

See pages 78-82, for municipal contacts.

REIMBURSEMENT FOR OIL SPILL RESPONSE

STATE LAW MAINTAINS THE RIGHT OF ANY PERSON TO RENDER ASSISTANCE IN CONTAINING OR REMOVING A POLLUTANT. HOWEVER, TO QUALIFY FOR REIMBURSEMENT OF EXPENSES YOU MUST FIRST GET APPROVAL FROM STATE OR FEDERAL AUTHORITIES.

Federal Funding

The Federal Pollution Revolving Fund is administered by the Coast Guard with expenditures authorized by the On Scene Coordinator (OSC).

Can be used when the discharger is unknown, does not act promptly, does not act appropriately, or if the discharge results from acts of God or acts of war.

CONTRACTORS:

- Informal Commitment.

  In an emergency situation when cleanup must begin immediately:

  - a verbal commitment to a contractor can be made by the OSC.
  - this is to be promptly followed by a written Authorization to Proceed and assignment of a project number within 24 hours.
  - can not exceed $50,000 without Coast Guard District 7 approval.

- Formal Contracts.

  Within 24 hours after making an informal commitment exceeding $10,000, the OSC will notify Coast Guard District 7 so that formal contract(s) may be negotiated.

- Invoice Certification.

  All invoices forwarded to Coast Guard District 7 for payment must be certified by the OSC daily.

STATE OF FLORIDA:

The State may undertake removal actions and may be reimbursed when the Federal OSC determines that the discharger does not effect removal properly or is unknown and that -

- Federal response cannot adequately minimize or mitigate significant damage to public health or welfare, or

- State response will cost less or not significantly more than Federal response.

- When the above conditions are met for State cleanup actions, the OSC advises the State of the assigned Pollution Revolving Fund project number, which must be used for all records and correspondence.

- As soon as possible, but not more than 60 days after completion of cleanup, the State representative will submit a letter requesting reimbursement, via the Captain of the Port of Miami, to:

  Commander
  Seventh Coast Guard District
  Federal Building
  51 S.W. 1st Avenue
  Miami, Florida 33130

The following information is necessary:

- Itemized costs for which reimbursement is being sought; copies of paid invoices, when applicable, are preferred.

- documentation of all reported costs must be retained and made available to the OSC upon request.

LOCAL GOVERNMENTS:

- The National Contingency Plan treats local governments as a subcomponent of State response (see next page for State fund procedures).

- Can be reimbursed by the Federal government if the OSC officially contracts for assistance.

REIMBURSEMENT (Cont'd.)

State of Florida Funding

The Florida Coastal Protection Trust Fund is administered by Florida Department of Natural Resources (FDNR) with expenditures authorized by the State Agency Coordinator (SAC).

Can be used when federal funds have been used to the maximum extent possible or when federal authorities have declined to expend federal funds in a cleanup effort.

APPROVAL PROCEDURE:

- Approval must be received from FDNR prior to commencement of cleanup activities.
- Two of the following three individuals within FDNR must approve proposed cleanup actions:
  - Executive Director
  - Assistant Executive Director
  - State Agency (Oil Spill) Coordinator (SAC)
- When cleanup must begin immediately:
  - approval may be by telephone, but written verification of the verbal agreement must be sent promptly.
- Invoices submitted for reimbursement will be verified by the SAC, and must reconcile with the Oil Spill Investigative Reports compiled by the Florida Marine Patrol.
- Invoices will be dispersed for payment after approval by the SAC and Executive Director, FDNR.

COMMERCIAL CLEANUP CONTRACTORS:

- Prior consideration will be given to certified cleanup organizations by FDNR for spill containment and cleanup contracts.

REIMBURSEMENT (Cont'd.)

- Certification can be received by application to FDNR on a form supplied by the department (information available from SAC).
- Prior to commencing State funded cleanup activities, an agreement must be executed and signed by a representative of the cleanup organization.
- A sample of the agreement is in the Florida Coastal Pollutant Spill Contingency Plan, which is available from the State Agency Coordinator (see page 10 for telephone number).

LOCAL GOVERNMENTS:

- Prior approval of any expenditures must be received from the State as described in Approval Procedure, above.
- Careful records must be kept including:
  - itemization of all costs for which reimbursement is sought,
  - documentation of all reported costs for verification upon State request.

LOCAL GOVERNMENT OR CITIZEN DAMAGE CLAIMS

Florida Coastal Protection Trust Fund

- Claims can be made for damages sustained as the direct result of a coastal pollutant spill.

- The claimant should contact the nearest Florida Marine Patrol District office within 180 days of the date of the spill (see page 10).

- Within 5 days of notification, the Marine Patrol District will send a written acknowledgement to the claimant, indicating that the following information should be submitted within 30 days to that office:

  - A completed Reimbursement for Damage Claim Form. The form will be provided with the claim acknowledgement by the Marine Patrol.

  - Three estimates for repair of damage to property. These estimates should be on letterhead stationery from three repair facilities and pertain specifically to the property damaged directly by the spill.

  - Three photographs of the damage, with at least one including the registration number of the damaged property, if applicable.

- An investigation of the claim will be made by the Florida Marine Patrol.

- The Executive Director of FDNR will establish the amount to be awarded by the Department of Banking and Finance for payment by the Treasurer.

- If either the claimant or the person determined by the Executive Director to be responsible for the discharge disagrees with the damage award, a hearing may be requested (120.57, F.S.).

SHORELINE PROTECTION

SHORELINE PROTECTION LINES OF DEFENSE

First line of defense:

Containment at the spill site, whether offshore or inside an embayment, and pickup with skimmers.

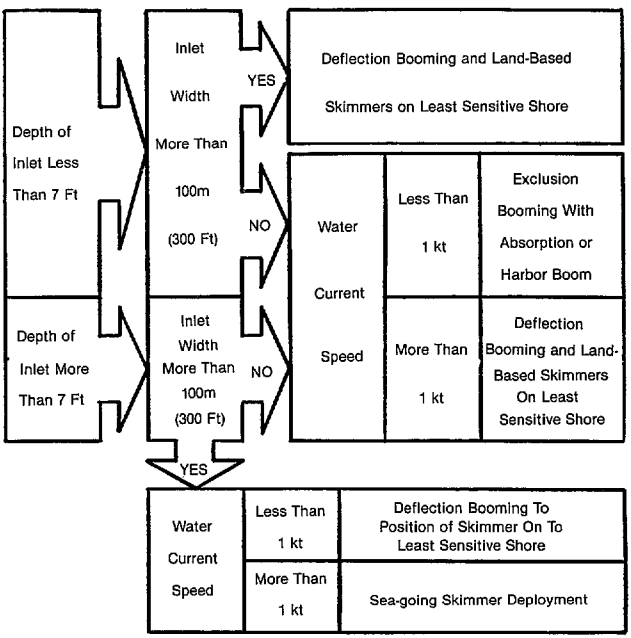
Second line of defense:

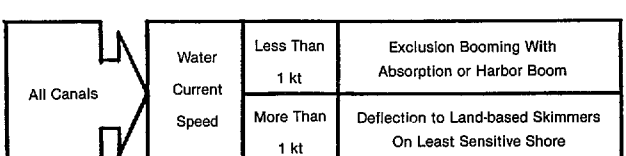
Exclusion and diversion boom deployment to protect sensitive areas and allow oil recovery by skimmers (for appropriate locations for boom deployment, refer to South Florida Oil Spill Atlas).

Third line of defense:

Boom deployment at secondary inlets, canals and creeks connected to inlets and bays, when currents and winds cause first and second lines of defense to be breached (for appropriate locations for boom deployment, refer to South Florida Oil Spill Atlas).

DECISION KEY TO DETERMINE PROTECTION MEASURES





SHORELINE PROTECTION PRIORITIES

The South Florida Regional Planning Council has prepared an Environmental Sensitivity Atlas and accompanying Technical Report which provide priority protection information for spill response coordinators. The information, based on physical, biological, and socioeconomic vulnerability to an oil spill, along with the information presented on relative costs and problems associated with different cleanup techniques, provides a basis for decisions on the most effective prevention and cleanup actions.

The shoreline of South Florida is divided into 11 types, and each is assigned an Environmental Sensitivity Index (ESI) number ranging from 1 to 10b, with sensitivity to spilled oil increasing with increasing numbers:

ESI #	Shoreline Type
1	Exposed, vertical rocky shores and seawalls
2	Exposed rocky platforms
3	Fine-grained sand beaches
4	Coarse-grained sand beaches
5	Mixed sand and gravel beaches and fill
6	Gravel beaches and riprap
7	Exposed tidal flats
8	Sheltered rocky shores and seawalls
9	Sheltered tidal flats
10a	Mangroves
10b	Sheltered mangroves

Thus, when equipment or manpower available during a spill is inadequate to protect the entire coastline, resources should be deployed to ensure that oil does not reach those areas with the highest ESI numbers, and recommended cleanup techniques for other areas should be followed.

Information in the Atlas also includes distribution, abundance and seasonality of occurrence of wildlife; coastal commercial and recreational resources; and access and deployment locations for first, second, and third line defense measures.

Summaries of the information in the Atlas and Report are included in the Handbook for easy reference at a spill site.

SUMMARY OF SOUTH FLORIDA SHORELINE TYPES AND CLEANUP RECOMMENDATIONS

EXPOSED, VERTICAL ROCKY SHORES AND SEAWALLS (ESI=1)

Physical Description

- Steep scarps in limestone bedrock:
  - Little or no sediments in intertidal zone
  - Exposed to high wave energy
- Man-made, concrete or tightly cemented seawalls:
  - Generally extend below low-tide mark
  - Located on shorelines facing open ocean or open fetch areas exposed to high waves or strong currents
  - Usually found with other types of man-made structures designed for shoreline protection (riprap, fill)
  - Subtidal sediments natural or dredged bedrock, sand to boulder-sized fill, or natural sand with seagrass beds
  - Usually backed by low, sandy fill or concrete structures

Recommendations for Cleanup

- On general exposed shores, no cleanup is necessary
- On less exposed shores:
  - High-pressure spraying may be effective while oil is still liquid
  - Manual scraping of seawalls may be necessary for removal of tarry deposits
- Cleanup recommended only for aesthetic rather than environmental reasons
- Cleanup should not remove attached algae if possible

See pages 37-46 for specific cleanup techniques.

SUMMARY OF SHORELINE TYPES (Cont'd.)

EXPOSED ROCKY PLATFORMS (ESI=2)

Physical Description

- Intertidal areas of rocky beach cut into limestone platforms, with widths from 15 to 500 feet
- Platform surfaces irregular, and abundant tide pools common
- Sharp drop-off at seaward edges of platforms
- Platforms often covered by a thin veneer of sediment (mud to cobble sized)
- Large accumulations of seagrass wrack often along high-tide line
- Located on bay- and ocean-facing shores exposed to direct wave attack
- Narrow, sand and gravel beaches common
- Back beach vegetation controlled by slope:
  - Low-relief shores with mangroves
  - Higher-relief shores with terrestrial vegetation
- Access to shore in unpopulated areas very difficult

Recommendations for Cleanup Activity

- Oiled wrack should be removed where present
- Within high-use recreational areas:
  - High-pressure spraying of rocks may be effective with recovery of released oil
  - Scraping of rocks impossible due to irregular surface
  - No further cleanup is recommended
- Cleanup efforts should not remove attached plants and animals unnecessarily

See pages 37-46 for specific cleanup techniques.

SUMMARY OF SHORELINE TYPES (Cont'd.)

FINE-GRAINED SAND BEACHES (ESI=3)

Physical Description

- Short stretches of beach, with very low volumes of sand in the Florida Keys
- Located on ocean side of the Florida Keys, Virginia Key, and Key Biscayne
- Moderate to high wave activity
- Heavy wrack accumulations along high-tide line
- In the Florida Keys:
  - Offshore areas generally shallow
  - Subtidal grass flats overlying bedrock
- Usually high-use recreational areas with good access

Recommendations for Cleanup

- Cleanup should commence only after majority of oil has accumulated so sand removal is minimized
- Cleanup should concentrate on removal of oil and oiled wrack accumulated on upper swash zone
- Manual labor most desirable since these beaches are small in area and highly accessible
- Oiled sediment and beach wrack should be removed carefully from upper intertidal zones, preferably by shovels although mechanical methods may be used with caution
- No attempts should be made to remove buried oil
- In areas where heavy accumulations of beached oil occur, bird hazing techniques should be employed to prevent oiling of shorebirds
- Cleanup activities should avoid physical contact with natural dune vegetation

See pages 37-46 for specific cleanup techniques.

SUMMARY OF SHORELINE TYPES (Cont'd.)

COARSE-GRAINED SAND BEACHES (ESI=4)

Physical Description

- Beaches north of Virginia Key:
  - Mostly renourished; composed of quartz and shell fragments
  - Characterized by narrow, steep beach faces with wide, high back beaches
- Beaches south of Virginia Key:
  - Mostly natural; composed of locally-produced carbonate sediment
  - Very narrow; usually less than 10 m wide between dune and low water
  - Heavy accumulations of wrack common
- Low to moderate wave activity under fair weather conditions; high wave activity during storms
- Very high-use recreational areas
- Most common beach type in South Florida

Recommendations for Cleanup

- Cleanup should commence only after majority of oil has accumulated so sand removal is minimized
- Cleanup should concentrate on removal of oil and oiled wrack on upper swash zone
- Mechanical methods should be used cautiously and only on nourished beaches
- Beaches of natural sand accumulation (south of Virginia Key) should be cleaned manually to minimize sand removal
- Sand removal should be closely monitored on all beaches
- Rapid removal of beached oil prevents subsurface burial and reduce duration of oil exposure
- Oiled sediments and beach wrack should be removed carefully from the upper intertidal zones, preferably by shovels although mechanical methods may be used cautiously
- No attempt should be made to remove buried oil
- In areas of heavy beached oil accumulations, bird hazing techniques should be employed to prevent oiling of shorebirds

See pages 37-46 for specific cleanup techniques.

SUMMARY OF SHORELINE TYPES (Cont'd.)

MIXED SAND AND GRAVEL BEACHES AND FILL (ESI=5)

Physical Description

- Natural sand and gravel beaches:
  - Coarse material composed of shell and coral fragments
  - Located in areas of high wave activity
- Sand and gravel fill:
  - Composed of very poorly-sorted mixture of mud to cobble sediments
  - Can be very hard packed with mobile surface sediment
  - Beach sediment grain size and sorting not always related to wave conditions, thus high or low wave activity present
  - Profile generally artificially steepened
  - Usually easily accessible
  - Back beach characteristically steeply sloping
- Toe of beach face generally composed of coarser, better sorted sediment
- Wrack accumulations can be heavy in the Florida Keys

Recommendations for Cleanup

- Cleanup should commence only after majority of oil has reached the beach
- Oiled wrack and debris deposits should be removed
- Low- and high-pressure spraying may be used effectively
- Mechanical scraping and/or reworking of sediment is not recommended nor effective
- Cleanup by mechanical means should be used with extreme care to avoid excessive sediment removal

See pages 37-46 for specific cleanup techniques.

SUMMARY OF SHORELINE TYPES (Cont'd.)

GRAVEL BEACHES AND RIPRAP (ESI=6)

Physical Description

- Predominantly gravel- to boulder-sized riprap revetments
- Riprap generally composed of local limestone; boulders very irregular in size and shape
- Moderate to high wave activity, but sporadic in frequency
- Large accumulations of wrack south of Miami
- On riprap shores, little or no beach exposed at low tide
- Subtidal sediments adjacent to riprap structures tend to be finer grained, better sorted, and naturally occurring

Recommendations for Cleanup

- On gravel beaches, heavily oiled wrack and debris should be removed
- Sediment removal should be minimized
- High-pressure spraying of oiled riprap may help in cleaning exposed surfaces, but would have little effect on oil penetrated deeply into the rock
- Removal of riprap is not recommended

See pages 37-46 for specific cleanup techniques.

SUMMARY OF SHORELINE TYPES (Cont'd.)

EXPOSED TIDAL FLATS (ESI=7)

Physical Description

- Vary in width up to tens of meters
- Sediment composition dominated by sand with minor amounts of mud
- Moderate to high wave activity and tidal currents
- Migrating sand bars often present on seaward limit of flats
- Located in open bays, in the lee of offshore islands, or near tidal inlets
- Generally fringed by mangroves
- Can be sparsely to heavily vegetated by sea grasses
- Uncommon in South Florida due to small tidal range

Recommendations for Cleanup

- Cleanup impossible in most areas due to soft, water-saturated sediments and inaccessibility
- Cleanup should concentrate on oil and oiled debris removal from high-tide line
- Heavy machinery should not be used in order to avoid mixing oil into sediments

See pages 37-46 for specific cleanup techniques.

SUMMARY OF SHORELINE TYPES (Cont'd.)

SHELTERED ROCKY SHORES AND SEAWALLS (ESI=8)

Physical Description

- Rocky shores composed of limestone bedrock:
  - Very narrow beaches with vertical scarps and no sediment
  - Pitted and irregular surfaces
  - Low-energy wave and current environments
- Man-made concrete seawalls:
  - Dominate shorelines along interior and sheltered areas in populated areas
  - Structures extend beneath low-water level
  - Generally vertical or nearly so, with smooth regular surfaces
- Very common in South Florida

Recommendations for Cleanup

- Low- and high-pressure spraying may be effective with recovery of oil released during cleanup operations
- Large accumulations warrant the use of booms and skimmers

See pages 37-46 for specific cleanup techniques.

SUMMARY OF SHORELINE TYPES (Cont'd.)

SHELTERED TIDAL FLATS (ESI=9)

Physical Description

- Composed of soft mud
- Sheltered from waves and/or strong tidal currents
- Very shallow, even at high tide
- Very inaccessible
- Fringed by dwarf mangroves
- Uncommon in South Florida

Recommendations for Cleanup

- No cleanup is recommended since such operations are likely to be more harmful than oil impact
- Under heavy accumulations, when cleanup is deemed necessary to prevent chronic oil pollution, sorbent boom may be deployed above low-tide line to absorb oil as it is slowly released, but it must be replaced frequently to be effective

See pages 37-46 for specific cleanup techniques.

SUMMARY OF SHORELINE TYPES (Cont'd.)

MANGROVES (ESI=10A)

Physical Description

- Possibility of exposure to relatively high wave activity and currents
- Heavy wrack deposits in storm swash lines throughout forests
- Sediment ranges from thin layers of sand and mud to muddy peat on bedrock
- Topographic profile generally flat
- Exposed, fringing forests on windward side of Florida Keys often have a low sand ridge adjacent to shore
- Forests can range in width from 6 to 600 feet
- Rendered inaccessible by density, width, elevation, and sediment type
- Very common shoreline type in South Florida

Recommendations for Cleanup

- No cleanup recommended
- Recovery would be natural (though slow) with regular and storm-generated flushing
- Placement of sorbent boom along the mangrove fringe can significantly reduce quantity of oil penetrating the forest
- With heavy accumulations, when cleanup is deemed necessary to prevent chronic pollution of surrounding areas, low-pressure flushing (used in conjunction with sorbent boom) may be effective in cleaning oil from prop roots of fringing mangroves (only during periods of ebbing tides)
- No attempts should be made to clean interior mangroves

See pages 37-46 for specific cleanup techniques.

SUMMARY OF SHORELINE TYPES (Cont'd.)

SHELTERED MANGROVES (ESI=10b)

Physical Description

- Located in bays and basins well-sheltered from waves and tidal currents
- Sediments composed of thin to thick deposits of mud or irregular rock surface
- Very flat topographic profiles

Recommendations for Cleanup

- No cleanup of light to moderate accumulations is recommended
- With heavy accumulations, to prevent chronic oil pollution of surrounding areas, placement of sorbent along fringe mangrove forests (to absorb oil as it is slowly released) may be effective under close scientific supervision
- No attempt should be made to clean interior mangroves
- Proper strategic boom placement in sheltered lagoonal areas can be highly effective in trapping large quantities of oil, thus reducing the amount of oil reaching interior mangrove forests

See pages 37-46 for specific cleanup techniques.

SUMMARY OF SOUTH FLORIDA SHORELINE SENSITIVITY AND PROTECTION

Area	Resource	Potential Impact	Priority Response
Boca Raton Inlet to Virginia Key	• Beaches	• Tourism - height in winter	• First line of defense • Manual and natural cleanup to avoid increased beach erosion
		• Nesting turtles Loggerheads: May-Sept. Leatherbacks: April-July	• Transplant eggs (appropriate wildlife agency)
	• Offshore reefs	• Toxic effects of light, volatile petroleum products	• Avoid cleanup that pushes oil into surf
	• Lagoonal systems: - sheltered sensitive habitats - sheltered manmade structures	• Damage to mangroves, bird rookeries, and manatee wintering areas • Oiled structures require extensive cleanup	• Secondary line of defense at inlets: - Port Everglades - Government Cut - Boca Raton - Norris Cut
Key Biscayne to Key Largo	• Beaches	• Tourism • Turtles	• Same as above
	• National parks	• Interrupt recreational use	• First line of defense
	• Very sensitive and valuable natural resources		• Second line of defense at major inlets. • Third line of defense - sorbent and deflection boom near sheltered mangroves
Rodriquez Key to Marathon	• Exposed shore	• Minor, short-term damage	• Natural cleanup should be relatively rapid
	• Sheltered sensitive areas	• Impacts on wildlife habitat, fisheries, and manmade structures	• Secondary line of defense at - Plantation Key - Matecumbe Keys
Ohio Key to Dry Tortugas	• Sheltered sensitive areas	• Impacts on wildlife habitat, fisheries, and manmade structures	• First line of defense • Reflection and sorbent booming of mangroves (3rd line of defense)

OIL CLEANUP MEASURES

Cleanup Method	Description	Conditions and Requirements
1. Removal Methods		
Motor grader/ elevating scraper	Motor grader forms windrows for pickup by scraper.	Area open to traffic. Heavy equipment access. ESI=3, 4.
Elevating scraper	Elevating scraper picks up contaminated material directly off beach.	Area open to traffic. Heavy equipment access. ESI=3, 4.
Motor grader/ front-end loader	Motor grader forms windrows for pickup by front-end loader.	Area open to traffic. Heavy equipment access. Slower than above methods. ESI=3, 4.
Front-end loader; rubber-tired or tracked	Front-end loader picks up material directly off beach and hauls it to unloading area.	Area open to rubber-tired traffic. Heavy equipment access. Accumulations moderate. Preferred for gravel. ESI=3, 4, 5.
Bulldozer; rubber-tired front-end loader	Bulldozer pushes contaminated substrate into piles for pickup by front-end loader.	Where penetration is deep, oil accumulations heavy, and area will support limited traffic. Heavy equipment access. ESI=3, 4, 5, 6.

ON SOUTH FLORIDA SHORELINES

Physical Effect of Use	Biological Effect of Use
Removes only upper 3 cm of beach.	Removes shallow burrowing polychaetes, bivalves, and amphipods. Recolonization likely to rapidly follow natural replenishment of the substrate.
Removes upper 3 to 10 cm of beach. Minor reduction of beach stability. Erosion and beach retreat unlikely.	Removes shallow and deeper burrowing polychaetes, bivalves, and amphipods. Restabilization of substrate possibly slow; recolonization likely to follow natural replenishment of substrate; reestablishment of long-lived indigenous fauna may take several years.
Removes only upper 3 cm of beach.	Removes shallow burrowing polychaetes, bivalves, and amphipods. Recolonization likely to rapidly follow natural replenishment of the substrate.
Removes 10 to 25 cm of beach. Reduction of beach stability may result in some erosion and beach retreat.	Removes almost all shallow and deep burrowing organisms. Restabilization of the physical environment slow; new faunal community could develop in the interim.
Removes 15 to 50 cm of beach. Reduction of beach stability, may result in cliff retreat or inundation of backshores.	Removes all organisms. Restabilization of substrate and repopulation of indigenous fauna is extremely slow; new faunal community could develop in the interim.

Cleanup Method	Description	Conditions and Requirements
Removal Methods (Cont'd.)		
Sump and pump/ vacuum	Oil collects in sump as it moves down the beach and is removed by pump or vacuum truck.	To remove surface, fluid oil on firm substrate, in conjunction with diversion booms with long-shore current. Heavy equipment access. ESI=1-5, 8.
Manual removal of oiled materials	Oiled sediments and debris are removed by hand, shovels, rakes, wheelbarrows, etc.	To remove scattered oily debris on shores with no equipment access. Least environmental damage. Scraping tools, disposal containers, foot access. ESI=2-6.
Manual scraping	Oil is scraped from substrate manually using hand tools.	To remove light oil residue from seawalls. Difficult on irregular surfaces common in South Florida. Foot or light vehicular access. ESI=1, 8.
Beach cleaner	Commercial beach cleaning machine is pulled across beach.	To pick up hard patties or tar balls on large beaches open to traffic. ESI=3, 4.
Manual sorbent application	Hand scattering of sorbent material with raking up and disposal when oil is soaked.	To remove pooled or small amounts of floating, light nonsticky oil. Needs foot or boat access and disposal containers. Labor intensive. ESI=1-6, 8.

ON SOUTH FLORIDA SHORELINES (Cont'd.)

Physical Effect of Use	Biological Effect of Use
Requires excavation of a sump 60 to 120 cm deep on shoreline. Some oil will probably remain on beach.	Removes organisms at sump location. Potentially toxic effects from oil left on the shoreline. Recovery depends on persistence of oil at the sump.
Removes 3 cm or less of beach. Selective removal of material. Sediment disturbance minimal.	Removes and disturbs shallow burrowing organisms. Rapid recovery.
Selective removal of material. Labor-intensive activity can disturb sediments.	Removes some organisms from the substrate, crushes others. Oil not removed or recovered can be toxic to organisms repopulating the rocky substrate or inhabiting shore-zone downslope of cleanup activities.
Disturbs upper 5 to 10 cm of beach.	Disturbs shallow burrowing organisms.
Selective removal of material. Labor-intensive activity can disturb sediments.	Foot traffic may crush some organisms.

Cleanup Method	Description	Conditions and Requirements
Removal Methods (Cont'd.)		
Sorbent booms	Deployment of sorbent booms near shore to absorb oil as it is released.	Most useful in small, heavily oiled, sheltered areas to minimize recontamination as oil is naturally removed. ESI=9, 10.
Manual cutting of vegetation		To remove oiled vegetation, excluding mangroves, subject to scientific consultation.
2. Mechanical Dispersal		
High pressure flushing (hydroblasting), low temperature	High-pressure water streams remove oil from substrate where it is channeled to recovery area.	Preferred to remove oil from rocky scarps, platforms, riprap and seawalls. Light vehicular access. Recovery equipment. ESI=1, 2, 6, 8.
Steam-cleaning	Steam removes oil from substrate where it is channeled to recovery area.	To remove sticky oil from rocky scarps, platforms, riprap and seawalls. Light vehicular access. Recovery equipment. Fresh water supply. Generally not recommended. ESI=1, 2, 6, 8.

ON SOUTH FLORIDA SHORELINES (Cont'd.)

Physical Effect of Use	Biological Effect of Use
Some disruption of sediments during frequent changes of sorbent. Labor-intensive.	Foot and boat traffic may disrupt organisms.
Disturbs sediments because of extensive use of labor; can cause erosion.	Removes and crushes some organisms. Rapid recovery. Heavy foot traffic can cause root damage and subsequent slow recovery.
Can disturb surface of substrate.	Removes some organisms and shells from the substrate, damage to remaining organisms variable. Oil not recovered can be toxic to organisms downslope of cleanup activities.
Adds heat (> 100°C) to surface.	Removes some organisms from substrate but mortality due to the heat is more likely. Empty shells remaining may enhance repopulation. Oil not recovered can be toxic to organisms downslope of cleanup activities.

Cleanup Method	Description	Conditions and Requirements
Mechanical Dispersal (Cont'd.)		
Sandblasting	Sand moving at high velocity removes oil from substrate.	Last resort to remove thin tarry oil residue from seawalls for aesthetic reasons. Light vehicular access. Oil must be semi-solid. Supply of clean sand. Generally not recommended. ESI=1, 8.
Low-pressure flushing	Low-pressure water spray flushes oil from substrate where it is channeled to recovery points.	To remove scattered or light oil and oil debris on shores with no heavy equipment access. Recovery equipment. Light vehicular access. Least environmentally damaging method. ESI=2-6.
3. Mixing		
Push contaminated substrate into surf	Bulldozer pushes contaminated substrate into surf zone to accelerate natural cleaning.	To speed natural cleaning of gravel beaches in high wave energy conditions where sediment removal is not available. Heavy equipment access. Generally not applicable to South Florida. ESI=5, 6 (limited use).

ON SOUTH FLORIDA SHORELINES (Cont'd.)

Physical Effect of Use	Biological Effect of Use
Adds material to the environment. Potential recontamination, erosion, and deeper penetration into substrate.	Removes all organisms and shells from the substrate. Oil not recovered can be toxic to organisms downslope of cleanup activities.
Does not disturb surface to any great extent. Potential for recontamination.	Leaves most organisms alive and in place. Oil not recovered can be toxic to organisms downslope of cleanup.
Disruption of top layer of substrate; leaves some oil in intertidal area. Potential recontamination both on- and off-shore.	Kills most of the organisms inhabiting the uncontaminated substrate. Recovery of organisms usually more rapid than with removal of substrate.

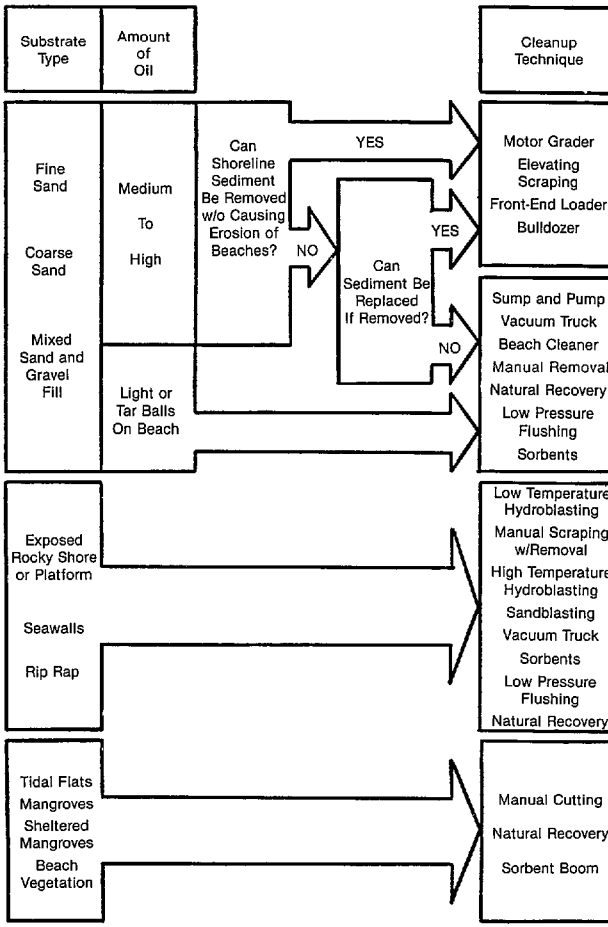
Cleanup Method	Description	Conditions and Requirements
Mixing (Cont'd.)		
Break up pavement	Tractor fitted with a ripper is operated up and down beach.	Used in high wave energy areas where heavy oils and residues have created a pavement on coarse-grained beach sediments. Heavy equipment access. Generally not applicable to South Florida. ESI=5, 6 (limited use).
4. Natural Recovery		
No cleanup	No action taken. Oil left to degrade naturally.	Used for light accumulation on low priority shores or areas with difficult accessibility. Recommended for sheltered tidal flats and most mangrove-dominated shorelines. ESI=1-10.

NOTE: See pp. 56-57 for Federal cleanup techniques and policies; p. 64 for State.

ON SOUTH FLORIDA SHORELINES (Cont'd.)

Physical Effect of Use	Biological Effect of Use
Disruption of sediments. Leaves oil on beach.	Disturbs shallow and deep burrowing organisms.
Some oil may remain on beach and could contaminate clean areas.	Potential toxicity effects and smothering by the oil. Potential incorporation of oil into the food web. Potential elimination of habitat if organisms will not settle on residual oil.

DECISION KEY FOR CLEANUP OF DIFFERENT SUBSTRATES



THE RATE OF CLEANUP (HOURS PER ACRE) BY METHOD

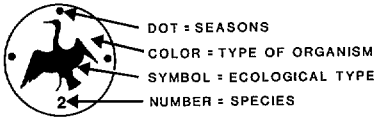
RELATIVE RANK	CLEANUP METHOD	ROUGH ESTIMATE OF CLEANING RATE* IN HOURS PER ACRE
1)	Steam cleaning	67.5
2)	Manual cutting	62.3
3)	Sandblasting	54.0
4)	High-pressure flushing (hydroblasting)	45.0
5)	Combination bulldozer/ front-end loader	10.0
6)	Front-end loader (rubber-tired), tracked	6.6
7)	Combination motor grader/ front-end loader (rubber-tired), tracked	2.4
8)	Push contaminated substrate into surf	2.0
9)	Combination motor grader/ elevating scraper	1.0
10)	Elevating scraper	1.0
11)	Breaking up pavement	0.6
12)	Beach cleaner	0.5

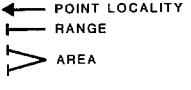
* These rates are based on 100 foot hauling distance.

KEY TO WILDLIFE MARKERS

The Environmental Sensitivity Atlas and Technical Report (refer page 23) contain extensive information on the location, range, seasonality and species of South Florida coastal wildlife. The symbols below are used throughout the Atlas to identify wildlife considerations that must be taken into account in oil spill prevention and cleanup decision making.

KEY TO WILDLIFE MARKERS





Familiarity with these symbols should aid prompt action to protect wildlife in the event of a spill.

SUMMARY OF WILDLIFE OIL SENSITIVITY, PREVENTION, AND CLEANUP

Animal Type	Sensitivity	Prevention	Cleanup
Resident Mammals: Manatee or Sea Cow	• Possible respiratory stress due to inhaling oil or fumes • Poisoning due to ingestion of oil on vegetation	• Hazing or scaring of animals from oiled areas* • Booming of vegetated areas in manatee habitat to prevent oiling	• Clear or remove oiled vegetation
Key Deer	• Possible contamination of food • Possible oiling of animals if swimming	• Booming of mangrove areas • Hazing animals from oiled areas*	• Clean oiled vegetation • No methods for animal cleanup have been developed
Coastal Birds	• Oiling and alteration of feeding habitat • Oiling of birds and subsequent loss of insulation and waterproofing • Ingestion of oil from preening feathers may result in internal organ degeneration and hemorrhaging of digestive tract	• Hazing of birds away from oiled areas - avoid near rookeries* • Greatest efforts should be made during breeding season when most impact would occur.	• Clean oiled habitat • Clean oiled birds**
Reptiles: Sea Turtles	• Nest on beaches - oiling of adults and young Loggerhead: May-Sept. Leatherback: April-July • Offshore oiling inhibits respiration and swimming	• Divert oil from nesting areas • Hazing animals from oiled areas*	• Transplant eggs from oiled to unoiled areas* • Clean oil from animal and deliver to wildlife agency for safe release
Crocodiles	• Oiling of habitat • Especially sensitive during nesting: April-August	• Divert oil from habitat	• Transplant eggs*

* Only appropriate wildlife authorities should do this.

** Should only be done under direction of trained personnel (see Directory, pages 86-87, for contacts).

SUMMARY OF LESS SENSITIVE HABITATS AND ANIMALS IN SOUTH FLORIDA

Habitat/Animal	Sensitivity	Actions
Coral Reefs	• If submerged, oil can float over • If oiling does occur, long-term effects may result	• If equipment is available, oil should be diverted • Long-term monitoring after a spill necessary to detect most coral responses
Seagrasses	• If submerged, oil can float over • Grasses smothered in Puerto Rico showed no significant damage • In temperate areas, acutely toxic effects have been seen, but few chronic effects	• If equipment is available, oil should be diverted • Long-term monitoring
Whales and Dolphins	• Eye irritation and respiratory stress may result	• Hazing by appropriate wildlife authorities may prevent animals from entering oiled areas
Marine Fisheries	• No impacts have been observed during or after other spills	• Long-term monitoring should be conducted • No prevention or cleanup methods have been developed
Inshore Fishes and Shellfish	• Acutely toxic effects on larval fishes can occur • Actual (or perceived) tainting of flesh has been claimed	• Long-term monitoring should be conducted • No prevention or cleanup methods have been developed

LEGAL RESPONSIBILITIES

FEDERAL LEGAL RESPONSIBILITIES

Federal oil spill response authority is divided between:

- The U.S. Coast Guard - Coastal areas
- The U.S. Environmental Protection Agency - Inland areas

On-Scene Coordinator (OSC)

- Captain of the Port of Miami (COPM)
  - The first federal official from an agency with responsibility under the National Contingency Plan (NCP) will coordinate activities until the arrival of the OSC.
- Primary responsibilities
  - collect all pertinent facts about the discharge.
  - direct response operations in Federal fund-financed efforts and coordinates all other Federal efforts.
  - consult regularly with Regional Response Team (RRT) and Scientific Support Coordinator (SSC).
  - advise the appropriate state agency of all reported discharges.
  - immediately advise Federal Emergency Management Agency of potential major disaster situations.
  - develop and maintain a contingency plan.
  - provide documentation necessary for cost recovery.
- Actions when spill occurs
  - Notify responsible party of liability for spill and determine if party is taking proper removal action.
  - If so, monitor actions.
  - If not, or if responsible party is not known, initiate Federal response action, including contracting with cleanup firm(s) and coordinating State and local agency action.

Federal Regional Response Team (RRT)

The RRT is responsible for planning and preparedness for oil and hazardous substances spills. During actual spills, RRT members are called as necessary to assist the OSC.

Federal Agency RRT Membership:

Department of Transportation	- Commander, Coast Guard District in which spill incident occurs
Environmental Protection Agency	- EPA Region IV, Atlanta, GA
Department of Commerce	- NOAA Ocean Assessment Div. Rockville, MD
Department of Interior	- Fish & Wildlife Service Atlanta, GA
Department of Defense	- Sixth Naval District Charleston, S.C. First U.S. Army Fort Meade, MD. Corps of Engineers South Atlantic Division Atlanta, GA
Department of Agriculture	- Southern Region U.S. Forest Service Atlanta, GA
Department of State	- Department of State Washington, DC
Department of Justice	- U.S. Attorney for area in which spill occurs
Department of Energy	- Savannah River Operations Office, Aiken, SC
Department of Labor	- OSHA Technical Support Atlanta, GA
Department of Health and Human Services	- Public Health Service Atlanta, GA
Federal Emergency Management Agency	- Atlanta, GA

See pages 67-69 for telephone numbers.

FEDERAL RESPONSIBILITIES (Cont'd.)

Florida Membership on RRT:

Department of Natural Resources
Department of Environmental Regulation
Bureau of Emergency Management

See pages 70-71 for telephone numbers.

National Response Team (NRT)

The NRT, located at Washington, D.C., U.S. Coast Guard Headquarters, also called the National Response Center (NRC), is responsible for national planning and coordination.

Federal Legal Authority

Federal Water Pollution Control Act of 1977 (FWPCA) as amended.

- Prohibition

  33 USC 1321(b)(3) prohibits the discharge of a harmful quantity of oil or hazardous substances into or upon navigable waters of the United States.

  - Navigable waters extend to a distance of 12 miles offshore.

  - A "harmful quantity" of oil is defined as any quantity discharged which causes "a film or sheen upon or discoloration of the surface of the water or adjoining shorelines... or causes a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines" (40 CFR 110.3(d).

- Reporting

  33 USC 1321(b)(5) requires the person in charge of any vessel or facility from which a discharge in violation of the Act occurs to notify the Coast Guard or EPA immediately (See page 65 for information required).

- Penalties

  - A criminal penalty of not more than $10,000 or imprisonment for not more than one year, or both, will be assessed against the responsible party for failure to report a spill.

FEDERAL RESPONSIBILITIES (Cont'd.)

- A penalty of not more than $5,000 will be assessed against the owner or operator of the facility or vessel from which the discharge occurs (33 CFR 1321(d)(c)).

- Responsibility for Containment and Removal

  Section 311(c)(1) of the Clean Water Act requires the Federal government to remove or arrange for the removal of oil or hazardous substances, if such removal is not being properly done by the discharger.

  - Cleanup is considered necessary when it will limit environmental damage caused by the spill.

- Recovery of Costs

  Under 33 CFR 1321(f)(1), the discharger is liable to the U.S. Government for actual costs incurred in the removal of oil unless he can prove that the discharge was solely a result of:

  - an act of God,
  - an act of war,
  - negligence on part of the U.S. Government, or
  - an act of omission by a third party.

Federal Cleanup Techniques and Policy

- First, limit spread of oil to smallest possible area.

- Coast Guard response is limited to control, removal, and disposal of spilled oil, and does not include restoration.

  - Removal is defined by the Fish and Wildlife Protection and Conservation Act (FWPCA) as "the taking of such actions as may be necessary to minimize or mitigate damage to the public health or welfare including, but not limited to, fish, shellfish, wildlife, and public and private property, shorelines, and beaches."

  - Coast Guard policy includes, as part of removal, repairing unavoidable damages due to removal actions, such as replacement of sand and shoreline vegetation; however, if the damage to the

vegetation or beach is a result of the pollution only, the replacement of these resources is a restoration activity. Restoration activities are the responsibility and financial burden of the appropriate government agencies.

- Removal Techniques

  Mechanical Methods:

  - First priority because no secondary pollution results.
  - Consolidation of oil with booms, then removal with mechanical skimming devices or other appropriate recovery devices.
  - Care should be taken to minimize environmental damage during removal.

  Manual Methods:

  - Sorbent material is used, either broadcast or in boom form, and collected by hand as it becomes saturated.

  Chemicals and Other Additives

  - The OSC, with concurrence of the EPA representative to the RRT and in consultation with the State, may authorize the use of dispersants and other chemicals on oil spills, provided however that such dispersants and other chemicals must be on the list of accepted dispersants prepared by EPA.
  - For detailed restrictions and guidelines see: National Oil and Hazardous Substances, Pollution Contingency Plan; Final Revision, 40 CFR Part 30 (47FR31180). (Ref: page 91).

Federal Information Sources

- Spill Cleanup Inventory System (SKIM)
  - Computerized system provides the OSC with location, type, and source of containment and cleanup equipment.

FEDERAL RESPONSIBILITIES (Cont'd.)

- The SKIM system presently stores information on the availability of the following types of equipment:

Containment Boom	Dispersants
Sorbents	Biological Agents
Surface Collecting Agents	Vacuum Trucks
Pumping Systems	Floating Storage Equipment
Beach Cleanup Equipment	Aircraft
Boats	Special Clothing/Safety Equipment
Communications Equipment	Disposal Facilities
Generators	
Skimmers	

- SKIM data is available at each Marine Safety Office and office of the Captain of the Port.

- Pollutant Spill Trajectory Forecasting

  - The National Response Center (1-800-424-8802) can forecast the path of spills in both high seas and coastal areas for which sea currents are known.

  - The OSC can get trajectory forecasts from the NRC, or from the SSC working for NOAA.

- Sample Analysis Laboratories

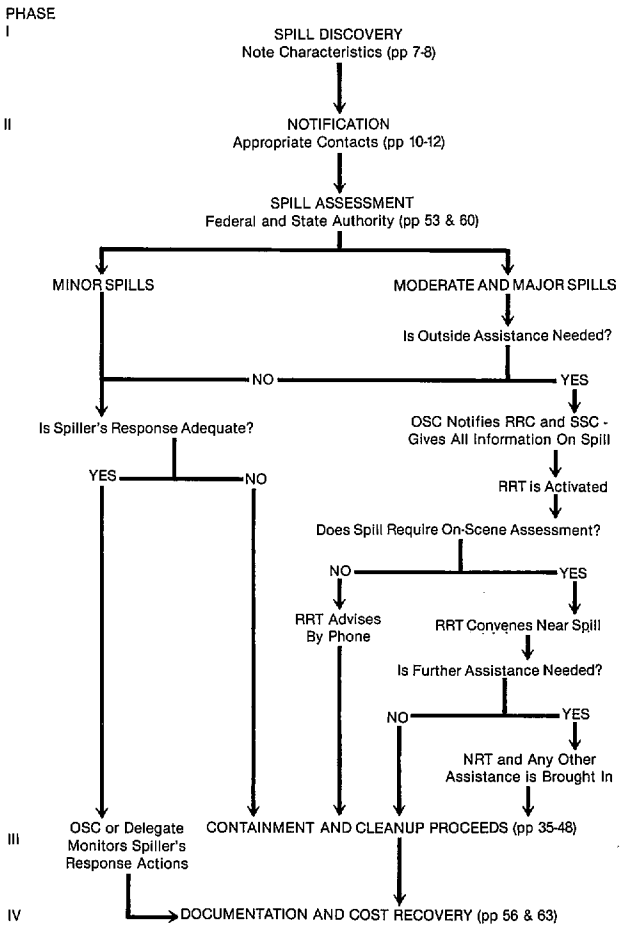
  - The Central Oil Identification Laboratory in Washington, D.C., is available to the Coast Guard OSC for matching oil samples.

  - Commercial Sampling Laboratories may be used when rapid analysis is needed, as long as methods are compatible with Coast Guard methods.

U.S. Coast Guard Operational Response Phases

Phase I : Discovery and Notification
Phase II : Preliminary Assessment and Initiation of Action
Phase III : Containment, Countermeasures, Cleanup, and Disposal
Phase IV : Documentation and Cost Recovery

U.S. COAST GUARD SPILL RESPONSE PHASES



STATE OF FLORIDA LEGAL RESPONSIBILITIES

Spill Response Activity and Coordination - General

State response to oil spills in coastal waters is coordinated by the State Agency Coordinator (SAC), a staff member of the Department of Natural Resources. The SAC will provide all information to the State Response Team (SRT) and will work with the Federal OSC to ensure coordination between State and Federal cleanup action.

State Agency Coordinator (SAC)

- A member of the Department of Natural Resources staff designated by its Executive Director.
- Primary Responsibilities of the SAC
  - responsible to the Chairman of the State Response Team (SRT) for coordination of the team during a coastal spill.
  - coordinate with the Federal OSC.
  - collect all information concerning the spill and transmit to the SRT.
  - collect and verify all support documentation for cost recovery and expenditure reimbursement.
  - develop and maintain the State Contingency Plan.
  - approve all disbursements for cleanup.

State Response Team Chairman

- The Executive Director of FDNR
- Primary Responsibilities
  - overall management and direction of SRT, including authorization to activate, direct, and deactivate.
  - principal public spokesman for SRT, including authorization of information for the press.
  - advises the Governor regarding the need for a Declaration of Emergency Proclamation.

STATE RESPONSIBILITIES (Cont'd.)

State Response Team (SRT)

- The SRT is the State body responsible for preparing for coastal oil spills, acting separately from but in coordination with the Federal RRT. During spills, members of the SRT are activated as necessary to assist and advise the SRT Chairman and SAC.

- State Agency SRT Membership

  Department of Natural Resources
  Department of Environmental Regulation
  Department of Veteran & Community Affairs
  Department of Commerce
  Department of Highway Safety & Motor Vehicles
  Department of Law Enforcement
  Department of Legal Affairs
  Department of Military Affairs
  Department of Transportation
  Game and Fresh Water Fish Commission
  Governor's Office
  Department of Health & Rehabilitative Services

See pages 70-73 for telephone numbers.

State Legal Authority

Pollution Spill Prevention and Control Act, 1979, Chapter 376, F.S.

- Chapter 376 supports and complements the Federal Clean Water Act.

- Discharge of pollutants into or on any coastal waters, estuaries, tidal flats, beaches, or lands adjoining the seacoast of the State in any manner defined by Subsection 376.011-376.21, Florida Statutes, is prohibited by 376.051, Florida Statutes.

- Lead State Agency

  - For coastal spills, Department of Natural Resources

  - For inland spills, Department of Environmental Regulation

See page 9 for jurisdictional boundaries.

STATE RESPONSIBILITIES (Cont'd.)

- Reporting

  - Chapter 16N-16.22, F.A.C., requires the pilot or master of any vessel or the person in charge of any terminal facility that has a pollutant discharge to notify the Florida Marine Patrol or the U.S. Coast Guard within one hour of discovery. (See page 65 for information required).

- Penalties

  - Suspension of state registration of a vessel or facility may be imposed if FDNR determines that unsatisfactory preventive measures or containment and cleanup capacities were the reason for a discharge of pollutants.

  - Violation of the Act is punishable by a civil penalty of up to $50,000 per violation per day, to be assessed by FDNR; each day during any portion of which the violation occurs constitutes a separate offense.

- Responsibility for Cleanup and Removal

  376.09(1), Florida Statutes:

  - requires the person responsible for a discharge prohibited by the Act to contain, remove, and abate the discharge to the satisfaction of FDNR.

  - authorizes FDNR to remove or contract for the removal of a spill regardless of performance by the person responsible for the spill.

  376.09(5) and (6), Florida Statutes:

  - maintains the right of any person to render assistance in containing or removing a pollutant.

  - requires prior approval by FDNR for State reimbursement of costs incurred in dealing with a spill.

STATE RESPONSIBILITIES (Cont'd.)

- Recovery of Costs

  Under 376.12(1) and (2), Florida Statutes, a discharger is liable to the State of Florida for all costs of cleanup or abatement, with an unlimited ceiling if the spill was the result of willful or gross negligence or misconduct.

  - Any person claiming to have suffered damage as a result of a prohibited discharge of pollutants can apply to the State for compensation (see page 19 for procedure).

State Spill Response Organization

- Notification (see pages 10-14)

- Verification

  - The Florida Marine Patrol district office will send personnel to the spill site.

  - Within 2 hours of the spill, a Preliminary Oil or Hazardous Pollutant Spill Report is made, determining the severity of the discharge: minor, moderate, or major.

- Response

  - Regardless of spill size, the Florida Marine Patrol will

    a) conduct an investigation of the spill to substantiate the State's subsequent billing to the spiller,

    b) provide traffic supervision and control for water transportation routes affected by the spill, and

    c) conduct on-scene monitoring of all cleanup activities by commercial contractors and others.

  - The degree of State involvement in response will increase as the severity of the spill increases.

  - Members of the State Response Team will be involved and the entire team activated as characteristics of the spill warrant.

STATE RESPONSIBILITIES (Cont'd.)

State Cleanup Techniques and Policies

- Priorities and procedures are in accordance with those of the Federal government (see pages 56-57) with the following additional restrictions:
  - Use of motorized equipment on beaches or shores requires prior approval of FDNR (Chapter 16B-33, Florida Administrative Code).
  - Emergency coastal control line permits are required from FDNR when cleanup could alter the physical characteristics of beaches of shores (Chapter 16B-33, Florida Administrative Code).
  - Use of chemical dispersants is prohibited without prior written consent of FDER (memorandum of understanding between FDNR and FDER).

SPILLER LEGAL RESPONSIBILITIES

A spiller is required to provide the following information to the Florida Marine Patrol and the U.S. Coast Guard:

(a) Name, occupation, title and telephone number of person making notification.
(b) Type of pollutant spilled.
(c) Location of spill (nearest city, river, bay, miles, etc.)
(d) Type of installation or carrier involved in the spill.
(e) Estimated amount of pollutant spilled.
(f) Date and time (local) of spill.
(g) Persons and agencies already contacted.
(h) Size and characteristics of area already affected by the spill.
(i) Containment and cleanup efforts to date.
(j) Cause of spill if known.
(k) Person or firm in charge of source.

Make this report by phone within 1 hour of the spill to:

Miami Marine Safety Office
111 S.W. 3rd Street
Miami, Florida
Day or Night: (305) 350-5691

Florida Marine Patrol:

Dade or Broward counties
District 6
P. O. Box 381196-1196
1275 N.E. 79th Street
Miami, Florida 33138
Day or Night: 305-325-3346
1-800-342-1829

Monroe County
District 9
2835 Overseas Highway
Marathon, Florida 33050
Day: 305-743-6542
Night: 904-488-5757
1-800-342-1829

Send a written report to these offices immediately.

DIRECTORY

FEDERAL REGIONAL RESPONSE TEAM

Current Contact	New Contact/ Date of Change

OSC

Commander R. N. Roussel
Marine Safety Office - Miami
U.S. Coast Guard
51 S.W. 1st Avenue
Miami, FL 33130
Day or night: 305-350-5691

Chairman

Primary: Capt. A. E. Tanos, Chief
Marine Safety Division
Seventh Coast Guard Dist.
Day: 305-350-5651
Night: 305-350-5611

Alternate: LCDR J. Wysocki, Chief

Environmental Protection Agency

Primary: Mr. John White
Regional Administrator
EPA Region IV Atlanta
Day or Night: 404-881-4727

Alternate: Mr. Al Smith, Chief
Oil and Hazardous
Materials Division
EPA Region IV Atlanta
Day: 404-881-3931
Night: 404-881-4096

Department of Interior

Primary: Mr. James Lee
U.S. Department of Interior
Atlanta, GA
Day: 404-221-4524
Night: 404-939-8954

Alternate: Mr. Waynon Johnson
U.S. Fish & Wildlife Service
Day: 404-221-6343
Night: 404-292-6732

FEDERAL RESPONSE TEAM (Cont'd.)

Current Contact	New Contact/ Date of Change

Federal Emergency Management Agency

Primary: Mr. Russell Yarbrough
Atlanta, GA
Day: 404-881-3442
Night: 404-873-4879

Alternate: Glenn C. Woodward
Atlanta, GA
Day: 404-881-3442
Night: 404-971-3327

Dept. of Health & Human Services

Primary: Mr. Paul Roper
Regional Consultant
Public Health Service
Atlanta, GA
Day: 404-242-2396
Night: 404-876-5244

Alternate: Mr. Jack Benson, Director
Division of Preventive
Health Services
Day: 404-231-2313
Night: 404-252-4571

Dept. of State

Contact will be made through the NRC.

Dept. of Energy

Primary: Mr. R. C. Webb, Deputy Director
Office of External Affairs
Savannah River Operations Office
Department of Energy, Aiken SC
Day or Night: 803-725-2889

Alternate: Mr. John L. Merrick

Dept. of Justice

U.S. Attorney -

Pensacola	904-946-5271
Tallahassee	904-224-3186
Jacksonville	904-946-2682
Tampa	813-826-2941
Orlando	305-946-6262
Miami	305-350-4471

FEDERAL RESPONSE TEAM (Cont'd.)

Current Contact	New Contact/ Date of Change

Dept. of Defense U.S. Army

Primary: Mr. G. Steele
First U.S. Army
Fort Meade, MD
Day: 301-677-2559
Night: 301-677-4805

Alternate: Mr. J. O'Neil
First U.S. Army
Fort Meade, MD
Day: 301-677-2559
Night: 301-677-4805

Corps of Engineers

Primary: Mr. Ronald Moore
South Atlantic Div.
U.S. Army COE, Atlanta
Day: 404-221-6792
Night: 404-981-1850

Alternate: Mr. Leo R. LaVinka
Day: 404-221-6792
Night: 404-289-8786

Dept. of the Navy

Primary: Mr. Dean Harr
Code N 311
Charleston Naval Base
Charleston, SC
Day: 803-743-4961
Night: 803-871-8322

Alternate: Duty Officer

Dept. of Commerce (NOAA)

Primary: Louis W. Butler
NOAA
Rockville, MD
Day: 301-443-8951
Night: 301-977-9129

Alternate: LCDR Stephen H. Manzo
NOAA
Miami, FL
Day: 305-361-4307
Night: 305-253-7062

STATE OF FLORIDA RESPONSE TEAM

Current Contact	New Contact/ Date of Change

Chairman

Dr. Elton Gissendanner
Executive Director
Department of Natural Resources
Day or
Night: 904-488-5757
1-800-342-1829

State Agency Coordinator (SAC)

Primary: Carolann DeFord Bowen
Dept. of Nat. Resources
3900 Commonwealth Blvd.
Tallahassee, FL 32303
Day: 904-488-1992
Night: 904-488-5757
1-800-342-1829

Alternate: Duty Officer
Florida Marine Patrol
Day or Night: 904-488-5757
1-800-342-1829

Dept. of Natural Resources

Primary: Col. D. N. Ellingsen
Florida Marine Patrol
3900 Commonwealth Blvd.
Tallahassee, FL 32303
Day or Night: 904-488-5757

Alternate: Floyd E. Adams
Day or Night: 904-488-5757

See page 10 for local Florida Marine Patrol phone numbers.

Dept. of Veteran & Community Affairs

Primary: Bill Lee
Bureau of Emergency Management
1720 Gadsden Street
Tallahassee, FL 32301
Day or Night: 904-488-1320

Alternate: Gordon Guthrie
Day or Night: 904-488-1320

Current Contact

New Contact/
Date of Change

Dept. of Environmental Regulation

State Spill Coordinator (SSC)
Primary: Greg Lee
Day: 904-488-0190
Night: 904-997-8435

Alternate: Jeff Taylor
2600 Blair Stone Road
Tallahassee, FL 32301
Day: 904-488-0190
Night: 904-576-4801

Dept. of Law Enforcement

Primary: Willis Booth
Day: 904-487-2503
Night: 904-385-6815

Alternate: Michael O'Connell
Day: 904-488-3231
Night: 904-893-0484

Dept. of Commerce

Primary: Joe Martinez
Room 510C, Collins Bldg.
Tallahassee, FL 32301
Day: 904-488-9377
Night: 904-878-1478

Alternate: Dean Gaiser
Day: 904-488-5606
Night: 912-385-4639

Dept. of Legal Affairs

Primary: Bruce Barkett
The Capitol
Tallahassee, FL 32301
Day: 904-488-9935
Night: 904-224-0077

Alternate: Kent Zaiser
Day: 904-488-9935
Night: 904-575-6976

FLORIDA RESPONSE TEAM (Cont'd.)

Current Contact

New Contact/
Date of Change

Dept. of Highway Safety
and Motor Vehicles

Primary: Capt. Z. J. Smallwood
Florida Highway Patrol
Neil Kirkman Bldg.
Tallahassee, FL 32301
Day: 904-488-5370
Day or Night: 904-488-8676

Alternate: Lt. Raker
Day or Night: 904-488-8676

Dept. of Transportation

Primary: Charles R. Miller
Burns Bldg.
605 Suwannee St.
Tallahassee, FL 32301
Day: 904-488-3547
Night: 904-877-4988

Alternate: Robert A. Lavette
Day: 904-488-3546
Night: 904-877-7969

Dept. of Military Affairs

Primary: Captain Jerry Vaughn
Office of the Adjutant Genl.
P. O. Box 1008
St. Augustine, FL 32084
Day: 904-824-8461
Night: 904-824-5376

Alternate: Willis J. Capo
Day: 904-824-8461
Night: 904-471-2809

FLORIDA RESPONSE TEAM (Cont'd.)

Current Contact	New Contact/ Date of Change

Dept. of Health & Rehab. Services

Primary: Herman Stokes
1321 Winewood Blvd.
Bldg. 2, Room 432
Tallahassee, FL 32301
Day: 904-487-1161
Night: 904-878-7884

Alternate: Paul Charters
Day: 904-488-8901
Night: 904-222-0571

Governor's Office

Primary: Dr. Charles Reed
The Capitol
Tallahassee, FL 32301
Day: 904-488-5603
Night: 904-385-9382

Alternate: Steve Hull
Day: 904-488-4801
Night: 904-222-3312

Game & Fresh Water Fish Comm.

Primary: Tom Goodwin
Farris Bryant Bldg.
620 S. Meridian Street
Tallahassee, FL 32301
Day: 904-488-3831
Night: 904-893-2946

Alternate: Dr. Allan Egbert
Day: 904-488-3831
Night: 904-878-4301

Florida Audubon Society

Dr. Herbert Kale, II
P. O. Drawer 7
Maitland, FL 32751
Day: 305-647-2615
Night: 305-567-3520
305-562-3631

COUNTY CONTACTS

Current Contact	New Contact/ Date of Change

BROWARD COUNTY:

Emergency Preparedness Div.

Arthur St. Amand, Director
Day: 305-765-5020
305-765-5026
Night: 305-523-2192

Fire Protection Division

Primary: Robert Bolila
Fire Chief
Day or
Night: 305-563-0808

Alternate: Joan Heggen
Community Services Dir.
Day: 305-357-6386

Environmental Quality Control Bd.

Primary: Bill Metzer
Day: 305-765-5881

Maintenance Division

Primary: Russell Backman, Director
Day: 305-765-5812
Night: 305-983-7975

Alternate: Charles Centonze
Assistant Director
Day: 305-765-5829
Night: 305-974-0330

Office of Planning

Kelly Carpenter-Craft
Day: 305-357-6612

COUNTY CONTACTS (Cont'd.)

Current Contact

New Contact/
Date of Change

Port Everglades Authority

Huey Manges, Chief of Security
Day or Night: 305-523-3404

Transportation Dept.

Primary: Roy Reynolds, Director
Water Management Division
Day: 305-357-6327

Alternate: Hal Priest, Asst. Dir.
Water Management Division
Day: 305-357-6326
Night: 305-994-1939

Water Management Division

Primary: Roy Reynolds, Director
Day: 305-357-6327

Alternate: Hal Priest
Day: 305-357-6326
Night: 305-994-1939

DADE COUNTY:

Dept. of Administrative Programs

Emergency Operating Center
Major Richard J. Bannon
Day: 305-446-1781
Night: 305-442-2300

Emergency Management

Martin Bishop, Director
Day: 305-596-8700
Night: 305-661-2919

Current Contact	New Contact/ Date of Change

Dept. of Environmental Resources Management

Primary: Tony Clemente, Director
Day: 305-579-2760
Night: 305-642-2635

Alternate: Bill Brandt, Chief
Pollution Control Division
Day: 305-579-2760
Night: 305-238-3994

Fire Department

Primary: E. A. Donaldson, Chief
Day: 305-596-8600
Night: 305-596-8593

Alternate: Officer In Charge
Fire Alarm Office
Day: 305-596-8576
Night: 911

Primary: Deputy Chief on each shift at Station #1
Day or Night: 305-442-1285
305-442-1286
305-442-1287

Alternate: Captain of each shift at Station #1
Day or Night: 305-442-1285
305-442-1286
305-442-1287

Parks & Recreation Department

Beach Operations Division
Primary: Jim Holland, Chief
Day or Night: 305-361-7385

Primary: Capt. Marcus Breece
Haulover Beach
Day: 305-944-3040

Alternate: Jim Hoover
Day or Night: 305-868-7075

Current Contact	New Contact/ Date of Change

Police Department

Communications Shift Commander
Day or Night: 305-596-6263
911

Public Works Department

Primary: Walter Herndon
Day: 305-579-2960
Night: 305-651-1350

Alternate: Ed Goldin
Day: 305-592-3115
Night: 305-258-5929

MONROE COUNTY:

Civil Defense

Bill Wagner, Director
Day: 305-294-9581 (Key West)
305-294-4641 (Ext. 566)
305-296-2424
Night: 305-289-1789
305-296-2424

Emergency Services

James Paros, Coordinator
Day: 305-743-6619
305-294-4641 (Ext. 155)
Night: 305-743-9066
911

CITY CONTACTS

Current Contact

New Contact/
Date of Change

Bal Harbour Village

Primary: Robert Wheldon
Supt. of Public Works
Day: 305-866-4633
Night: 305-866-4633
305-866-1539

Alternate: Fred Maley, Village Mgr.
Day: 305-866-4633
Night: 305-866-4633
305-895-1517

Deerfield Beach

Engineering/Utilities Dept.
Dale Hollinbeck, Director
Day: 305-427-3331
Night: 305-421-0760

Dept. of Fire and Rescue
Primary: Herb Glattli, Div. Chief
Day: 305-427-3331 (Ext. 302)
Day or Night: 305-427-3341
Night: 305-427-3348

Alternate: Shift Commander
Day or
Night: 305-427-3341

Police Department
Primary: William Neal
Chief of Police
and Civil Defense
Day or
Night: 305-427-3343

Alternate: Capt. Roy Vrchota
Day or
Night: 305-427-3343

Current Contact

New Contact/
Date of Change

Fort Lauderdale

Fire Department
Primary: Lt. R. E. Lanier
Hazardous Materials Officer
Day: 305-761-2721
Night: 305-791-3398
911

Alternate: On Duty Batt. Chief
Day or
Night: 305-761-2588
305-761-2175

Police Department
Major Wayne Lowrey
Day or Night: 305-761-2334

Sergeant Gary Kroeger
Marine Patrol Supervisor
Day: 305-761-2151
Night: 305-761-2415

Port Everglades
Huey Manges, Security Chief
Day or Night: 305-523-3404

Public Works Department
F. T. Kain, Director
Day: 305-761-2431
Night: 305-961-4502

Hallandale

Public Works/Utilities
and City Engineer
Primary: John C. Depp, Director
Day: 305-458-3251 (Ext. 226)
Night: 305-456-1418

Alternate: Robert Hall
Day: 305-458-3251 (Ext. 234)
Night: 305-620-4625

CITY CONTACTS (Cont'd.)

Current Contact

New Contact/
Date of Change

Hillsboro Beach

Contact with:
Deerfield Beach Fire & Rescue
Primary: Herb Glattli
Division Chief
Day: 305-427-3331 (Ext. 302)
Day or Night: 305-427-3341
Night: 305-427-3348

Alternate: Shift Commander
Day or
Night: 305-427-3341

Hollywood

Beach Operations
Primary: Hugh Bowen, Supervisor
Day: 305-921-3423

Alternate: Jim Schumaker
Day: 305-921-3423
Night: 305-922-8092

Fire Department
Primary: James Ward, Chief
Day: 305-921-3448
Night: 305-921-3451

Alternate: On-Duty Combat Div. Chief
Day: 305-921-3448
Night: 305-921-3451

Key Colony Beach

Planning and Zoning Commission
Renee Parker, Chairman
Day: 305-289-1212
Night: 305-289-0292

Current Contact	New Contact/ Date of Change

Key West

David Dickey, U.S. Coast Guard
Marine Safety Department
Day: 305-296-6825
305-296-2525
305-294-4933

Sewer Department
Leighton D. Westlake
Day: 305-294-3721 (Ext. 195)
Night: 305-296-7038
305-294-5511 (Ext. 210)
305-745-0285

Lauderdale-by-the-Sea

John R. Forest, Mayor/Town Mgr.
Day: 305-776-0576
Night: 305-772-4505

Lighthouse Point

Fire Department
Primary: Charles Malone, Chief
Day or
Night: 305-941-2624

Alternate: Captain Elmer Hanf
Day or
Night: 305-941-2620

Miami

Primary: Howard Gary, City Mgr.
Day: 305-579-6040
Night: 305-579-6245

Alternate: Chief McCullough
Director of Fire Dept.
Day: 305-579-6300
Night: 305-579-6307

CITY CONTACTS (Cont'd.)

Current Contact	New Contact/ Date of Change

Miami Beach

Fire Department
Primary: William Miller, Div. Chief
Day: 305-673-7078

Alternate: Div. Chief On Duty
Day or
Night: 305-673-7171
305-673-7111

Public Works Department
Frank Aymonin, Director
Day: 305-673-7620
Night: 305-673-7683

Street Sewer & Street Lighting
Harry Dansky
Asst. Director of Public Works
Day: 305-673-7658
Night: 305-673-7683

North Miami Beach

Marine Patrol
Officer Skip Bosworth
Day or
Night: 305-948-2929

Pompano Beach

Fire Department
Primary: Buddy Borger, Asst. Chief
Day: 305-786-4126
Night: 305-942-2201

Alternate: Richard Wozniak, Chief
Day: 305-786-4126
Night: 305-942-2200

STATE AND NATIONAL PARK CONTACTS

Current Contact	New Contact/ Date of Change
Biscayne National Park Homestead, Florida	
Primary: James Sanders, Supt. Day: 305-247-2044 Night: 305-246-1262	
Primary: Linda Dye, Chief Resource Management and Research Day: 305-247-2044	
Alternate: Lorrie Sprague or Richard Curry Day: 305-247-2044	
John Pennekamp Coral Reef State Park, Key Largo, FL	
Primary: Capt. Carl Nellsen Park Manager Day: 305-451-1202 Night: 305-451-1521	
Alternate: Lt. George Jones Asst. Park Manager Day: 305-451-1202 Night: 305-451-0558	
Keys Wildlife Refuges U.S. Fish & Wildlife Services Big Pine Key, Florida	
Don Kosin Day: 305-872-2239 Night: 305-872-2977	
Everglades National Park	
Mr. Rick Dawson Day: 305-247-6211 (Ext. 259) Night: 305-251-1140	

Current Contact

New Contact/
Date of Change

ACADEMIC INSTITUTIONS:

Dade Marine Institute, Miami, FL

Primary: Nicholas J. Millar
Executive Director
Day: 305-361-9076
Night: 305-361-7934

Alternate: Gerald Johnson
Director of Operations
Day: 305-361-9076
Night: 305-361-7934

Florida Int'l. Univ., Miami, FL

Anitra Thorhaug, Ph.D.
Day or Night: 305-351-1181

University of Miami - Main Campus
Coral Gables, FL

Dr. Howard Teas
Day: 305-284-4125
Night: 305-238-2354

University of Miami
Rosentiel School of Marine and
Atmospheric Science, Miami, FL

Primary: Dr. Sam Snedaker
Day: 305-361-4085
Night: 305-665-9854

Alternate: Dr. Gil Voss
Day: 305-350-7312
Night: 305-271-8393

Nova University, Oceanographic Center

Primary: Dr. Richard Dodge
Day: 305-475-7488

Alternate: Dr. Curtis Burney
Day: 305-475-7488

LOCAL MARINE RESOURCES (Cont'd.)

Current Contact	New Contact/ Date of Change

ENVIRONMENTAL FIRMS:

Continental Shelf Associates, Inc.
Tequesta, FL

Primary: Robert Stevens, President
Day or
Night: 305-746-7946

Alternate: David Gettleson
Scientific Director
or
Fredrick Ayer, Vice Pres.
Day or
Night: 305-746-7946

Ocean Learning Institure, Inc.
Palm Beach, FL

Primary: John Grant
Day: 305-655-7243
Night: 305-833-6626

OILED WILDLIFE CLEANUP

Current Contact

New Contact/
Date of Change

TECHNICAL KNOWLEDGE:

Florida Wildlife Rescue Bird
and Animal Cleanup, Miami, FL

Day or Night: 305-696-4357

Dr. Herb Kale, Vice President
Ornithological Research
Florida Audubon Society
Maitland, FL
Day: 305-647-2615
Night: 305-843-5796

Suncoast Seabird Sanctuary
St. Petersburg, FL

Day or Night: 813-391-6211

Florida Game & Fresh Water Fish
Commission, Gainesville, FL

Stephen Nesbitt
Day: 800-432-2046
305-376-6481
Night: 800-342-8105

U.S. Fish & Wildlife Service
Miami, FL

Day or Night: 305-526-2916
Night:

National Key Deer Wildlife Refuge

Don Kosin
Big Pine Key, Florida
Day: 305-872-2239
Night: 305-872-2977

OILED WILDLIFE CONTACTS (Cont'd.)

Current Contact	New Contact/ Date of Change

SOURCES OF LABOR:

Broward County Audubon Society

Dr. Georgia Reynolds, President
Day or
Night: 305-792-7119

Oiled Bird Rescue Team
Joe Pundal
Day: 305-523-7644
Night: 305-563-0910

Keys Audubon Society, Marathon, FL

Ed Davidson, President
Day or Night: 305-743-2400

Tropical Audubon Society, Miami, FL

Laura Brinkley
Day or Night: 305-666-5111

OIL DISPOSAL SITES

Prior coordination and approval by the Florida Department of Environmental Regulation is necessary before these sites can be used for oil disposal.

South Dade County Landfill
Mr. Robert Johns
Metropolitan Dade County
Environmental Resource Management
Miami, FL
305-579-2760

Long Key Sanitary Land Fill
1 mile west of Layton
on Long Key & U.S.1
Mr. Charles Aquero, Manager
Municipal Service District
Key West
305-296-9680

Oil products, such as gasoline, that have an ignitable flash point below 140 degrees Fahrenheit, are classified by State and Federal law as hazardous, and must be disposed of at an EPA approved site, none of which are located in Florida (see page 12 for numbers to call for information).

PRIVATE OIL CLEANUP ORGANIZATIONS

Current Contact	New Contact/ Date of Change

Companies

Danmark, Inc.
333 N.W. 23rd Street
Miami, FL 33127
Day or Night: 305-573-0610
305-361-5033

Cliff Berry, Inc.
P. O. Box 13097
P/E Station
Ft. Lauderdale, FL 33316
Day or Night: 305-523-5979

Enviropact, Inc.
Technical Consulting
4790 N.W. 157th Street
Day or Night: 305-620-1700

Port Committees

Miami Spillage Committee
Primary: Edward Greenop
1015 N. American Way,
Room 116
Miami, FL 33132
Day: 305-379-2818
Night: 305-665-3830
305-379-2828

Alternate: Claude Bullock
Day: 305-579-5252
Night: 305-235-2638

Port Everglades Spill Committee
Primary: Chief Huey Manges
Port Everglades, FL 33316
Day or Night: 305-523-3404
305-522-1528

Other

Belcher Oil Company
Primary: Richard Plante
Day: 305-551-5200
Night: 305-421-8330
Day or Night: 305-766-1045

PRIVATE CLEANUP (Cont'd.)

Current Contact	New Contact/ Date of Change
Primary: Alligood Clayton Port Everglades Day: 305-525-4261 (Ext. 200) Night: 305-966-4063 Day or Night: 305-766-0162	
Alternate: Willie Byrd, Safety Division Day: 305-525-5461 (Ext. 204) 305-551-5454 Night: 305-693-2617 Day or Night: 305-948-1326	

OIL SPILL CONTINGENCY PLANS

FEDERAL:

National Oil and Hazardous Substances Pollution Contingency Plan; Final Revision. 40 CFR Part 1510. 45 FR 17832. March 19, 1980. Available from Oil and Special Materials Control Division (WH448), Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460.

Atlanta Coastal Region IV Oil and Hazardous Substances Pollution Contingency Plan; most recent revision promulgated October 19, 1983. Available from Chairman, Regional Response Team (see page 67 for address and telephone).

Local Oil and Hazardous Substances Contingency Plan (Miami); most recent revision promulgated November 10, 1981. Available from Miami Marine Safety Office (MSO) (see page 67 for address and telephone).

STATE:

Florida Coastal Pollutant Spill Contingency Plan. Available from State Agency Coordinator (see page 70 for address and telephone).

OTHER:

Port Everglades Spillage Committee Oil Spill Contingency Plan (see page 89 for address and telephone).

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